STRATEGIC HIGHWAY SAFETY PLAN

A COMPREHENSIVE APPROACH TO REDUCING TRAFFIC CRASH INJURIES AND DEATHS THROUGH COORDINATED ENGINEERING, EDUCATION, ENFORCEMENT, AND EMERGENCY RESPONSE

FORWARD

Thomas Sharp, Commissioner, Indiana Department of Transportation

Improving highway safety is vital to the health and well-being of every Hoosier. Traffic crashes in Indiana during 2004 claimed 947 lives and left more than 60,000 injured. Nationwide, traffic crashes are the leading cause of death from age three to 33 and the eighth leading cause of death across all ages.

Looking beyond the personal tragedy of death and injury, healthcare costs and lost productivity due to traffic crashes contribute to a significant economic loss annually. The toll is devastating. The cost of Indiana traffic crashes in 2004 was estimated to be $4.3 billion. That is more than $700 for every man, woman, and child in the state. If we are to make Indiana the nation's best place to live and work, we can no longer accept this level of loss on our roadways.

I am pleased to introduce Indiana's Strategic Highway Safety Plan, which will serve as a framework for efforts to make our highway system safer to drive, walk, and bike. It is a comprehensive strategy for making better data-driven decisions on where safety improvements are needed, how best to educate our drivers, make and enforce our laws, and ensure a swift emergency response to save lives and ease suffering when crashes do occur.

In the 21st century, Hoosiers should not settle for "business as usual." Nominal safety is just not good enough. Our citizens and guests deserve better and it is my hope that this plan will generate real, measurable, substantive safety improvements for all who travel our highways.

September 15, 2006

MISSION, VISION, AND GOAL

Mission

Make Indiana's highway system safer to drive, walk, and bike through a continually improving process generating data-driven decisions identifying where infrastructure safety improvement projects are most needed, how best to educate our drivers, improve enforcement of our traffic laws, and how to ensure a swift response to save lives and ease suffering.

Vision

No traffic fatality is acceptable and Indiana seeks to eliminate as many deaths, injuries, and crashes as humanly possible.

Goal

Reduce traffic crash fatalities to .98 per 100 Million-Vehicle Miles Traveled (HMVMT) in 2008 and .92 HMVMT in 2010.

BACKGROUND

Motor vehicle traffic-related fatalities in Indiana during 1999-2001 were the leading cause of death for persons aged 1 to 64 years and accounted for 27.1 percent of all injury deaths. - [Injuries in Indiana, ISDH, 2005]

In Indiana, there is approximately one traffic crash every 2 1/2 minutes with a person injured every 7 1/2 minutes, an alcohol-related crash every hour, and a fatality every 9 hours.

Indiana highway fatalities had decreased from 1,566 in 1970 to an all-time record low of 792 in 2002. However, the relatively steady reduction in fatalities recorded over the last four decades has reached a plateau with traffic deaths rising again into the range of 900 victims annually.

The numbers of drivers and the length of trips taken have increased as well, so the rate of fatalities when compared to the vehicle miles traveled in Indiana has actually gone down. In fact, in 2004, Indiana's fatality rate, stood at 1.25 HMVMT, which was better than the national average of 1.5 HMVMT.

Indeed, the Centers for Disease Control hails the reduction of the motor-vehicle crash death rate in the United States as a major public health success of the 20th century. In 1999, six times as many people were driving than in the mid-1920s, the number of motor vehicles in the U.S. had increased 11-fold, and the number of miles traveled was 10 times higher. Despite these huge increases in traffic, the annual death rate declined 90% in that time period.

Unfortunately, the National Highway Traffic Safety Administration's recent projections indicate the likelihood of increases in the national fatality rate in coming years, reversing the late 20th century trend of slow but steady reductions in traffic death rates. This tells us that when it comes to improving traffic safety, we have only harvested the low-hanging fruit. In order to reap more, we must reach higher. Our challenge for the 21st century is to regain momentum in improving highway traffic safety. Future success will require greater dedication, diligence, and resources.

Indiana's Strategic Highway Safety Plan (SHSP) represents a wide-range of methodologies to improve highway safety by drawing upon engineering, law enforcement, and public education resources to prevent or reduce the frequency and severity of traffic crashes. It is also a starting point for strengthening relationships with emergency responders and health care professionals, who work to save the lives and reduce the suffering of traffic crash victims. Their insight into the human and financial toll of crashes can provide significant direction on how we prioritize and attack crash problems.

This living document is a powerful tool to identify, analyze, and prioritize the greatest threats to highway safety. It identifies countermeasures designed to lower the number of crashes, injuries, and deaths that occur each year on Indiana highways. It encourages government agencies and safety advocates to work across jurisdictional boundaries to address crash problems regardless of where they occur.

The document represents a broad approach to improving highway safety by drawing upon engineering, enforcement, and educational strategies to prevent crashes. It also strengthens the relationship with emergency response and health care professionals, who respond to crashes and rehabilitate the injured. Their input can add new insight into the human and financial costs of crashes, which may influence how we prioritize and attack crash problems.

Shared duty and partnerships are important elements in reducing highway fatalities in Indiana. Better communication, coordination, and cooperation between state, regional, and local agencies as well as with safety advocates and organizations, are vital to successful implementation and deployment of highway safety improvement strategies.

PARTNERS

Stretching back almost to the dawn of the automobile age, state, local, and federal agencies have struggled with the desire to make travel by automobile safer. However, for many decades the efforts were largely institutional and focused within the missions of disparate agencies, governmental subdivisions, and even private organizations. As Indiana entered the 21st century, Hoosier highway safety leaders had begun working across organizational boundaries to identify opportunities for sharing, coordinating, and collaborating on these vital efforts. A Traffic Records Coordinating Committee (TRCC) formed in 1998 to achieve major improvement of the Indiana crash record system. In 2000, the "Leadership Team for Surface Transportation Safety in Indiana," first organized highway safety partners at the state, federal, and private level. Re-chartered in 2005, the team now includes . . .

The Indiana Criminal Justice Institute (ICJI) serves as the state's planning agency for criminal justice, juvenile justice, traffic safety, and victim services. It is the home of the Governor's Council on Impaired and Dangerous Driving, which is charged with developing policies, procedures, strategies, and programs to effectively manage and administer Indiana's highway safety program under 23 U.S.C. § 402.

The Indiana Department of Transportation (INDOT) is responsible for planning, designing, constructing, and maintaining state roads, interstates, and U.S. routes. It is the agency responsible for state implementation of the Highway Safety Improvement Program, and is required under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFTEA-LU) to produce and maintain the SHSP. INDOT is required to report annually to the Secretary of Transportation on progress being made to implement highway safety improvement projects under 23 U.S.C. § 148.

The Indiana State Police (ISP) serves as the state's front-line law enforcement agency. Their duties include working with communities to improve public safety, enforcing drug laws, investigating crimes, enforcing traffic laws, and enforcing the laws and regulations pertaining to commercial motor vehicles.

The Bureau of Motor Vehicles is charged with the licensing of drivers, the registration and titling of vehicles, the collection of taxes, and the management of records related to these functions.

The Department of Revenue Motor Carrier Services Division (DOR) oversees Indiana's "one stop shop" for commercial motor vehicle services. This includes international registration, over-size and weight permitting, fuel tax stamps, and other commercial vehicle programs.

The Indiana Department of Homeland Security (IDHS) embodies four divisions, the division of planning and assessment, the division of preparedness and training, the division of emergency response and recovery, and the division of fire and building safety. These divisions intertwine to accomplish the central mission of IDHS: safeguarding the lives and property of the citizens of Indiana.

In addition to oversight and support of Indiana's elementary and secondary school programs, the Department of Education (DOE) has oversight of all public school driver education programs. It is also home to the Indiana Motorcycle Operator Safety Education Program. A standard curriculum is taught at all training sites by instructors who have been nationally certified by the Motorcycle Safety Foundation (MSF), and who meet the additional requirements of the State. DOE also provides the initial training and certification, as well as required annual update training for all of the State's more than 20,000 school bus drivers.

Operation Lifesaver (OLI) is a private, non-profit, continuing public education program to end collisions, deaths, and injuries at places where roadways cross train tracks, and on railroad rights-of-way.

Four separate administrations within the U.S. Department of Transportation are active in Indiana's highway safety efforts, including . . .

The Federal Highway Administration (FHWA) carries out the Federal highway programs in partnership with the State and local agencies to meet the Nation's transportation needs. FHWA administers these programs to ensure that Federal funds are used efficiently and promote the use of the best available safety practices, programs, and technologies in all phases of highway planning, design, construction, and operation.

The Federal Motor Carrier Safety Administration (FMCSA) has the primary mission of reducing crashes, injuries, and fatalities involving large trucks and buses.

The National Highway Traffic Safety Administration (NHTSA) is tasked with enhancing traffic safety through education, research, establishing safety standards, and promoting enforcement activity. Indiana is serviced by the Great Lakes Regional center.

The Federal Railroad Administration (FRA) issues and enforces rail safety regulations, administers railroad assistance programs, conducts research and development in support of improved railroad safety and national rail transportation policy, and consolidates government support of rail transportation activities.

The leadership teams of these State, federal, and private organizations form the core Safety Team by demonstrating their willingness to accept the challenge of establishing safety emphasis areas, objectives, and strategies with a vision of significantly reducing Indiana's highway injury and fatality rates. They signed a charter committing to increased communications and looking for new partnerships. Moreover, these agencies recognize the need to engage local agencies, local units of government, and private sector organizations throughout Indiana to reduce crashes.

Beyond the core safety team, several independent organizations, agencies, commissions, and boards are making significant contributions to highway traffic safety by virtue of special statewide initiatives with which they are charged.

The Indiana Local Transportation Assistance Program (LTAP) provides technical assistance and training to the highway, road, and street departments of all counties, cities, and towns in Indiana. Technical assistance is provided through training programs conducted both at Purdue University and throughout the state; topical workshops and seminars on subjects pertaining to roads and streets; regular newsletters; and periodic publications.

The Center for the Advancement of Transportation Safety (CATS) is an arm of Purdue University that conducts research, analysis, and interpretation of traffic crash data to identify safety issues for State, county, and municipal entities, as well as for traffic safety coalitions and other organizations.

The Integrated Public Safety Commission (IPSC) is working with local, state, and federal public safety agencies, to implement a statewide, interoperable, digital 800 MHz trunked voice and mobile data communications network for public safety officials -- Project Hoosier SAFE-T (Safety Acting for Everyone-Together). SAFE-T seeks to replace inadequate, obsolete, and incompatible communications systems and allow interagency coordination and response to routine, emergency, and catastrophic events.

The Indiana General Assembly created the Indiana Wireless E911 Advisory Board (IWAB) in 1998 to work with county 911 authorities and wireless carriers throughout the state to improve Indiana's emergency communications infrastructure.

Effective July 1, 2006, Indiana law designated the Indiana State Department of Health (ISDH) as the lead agency for the development, implementation, and oversight of a statewide comprehensive trauma care system to prevent injuries, save lives, and improve the care and outcome of individuals injured in Indiana. ISDH is empowered to adopt rules concerning the development and implementation of a state trauma registry and standards and procedures for trauma care level designation of hospitals.

DEVELOPMENT PROCESS

When the SAFETEA-LU was signed into law in August 2005, Indiana had already laid the groundwork for meeting a key requirement of the new federal transportation funding bill -- a Strategic Highway Safety Plan (SHSP) -- developed in consultation with key highway safety stakeholders. The “Leadership Team for Surface Transportation Safety in Indiana,” had formed in 2000. The team’s charter outlined the intent to develop a strategic safety plan that identified opportunities for achieving Indian’s safety goals through interagency sharing, coordination, and collaborating.

With Indiana’s Safety Leadership Team already in place and at work, collaboration on the development of a comprehensive, data driven approach to highway safety as required by SAFETEA-LU was made easier with much of the work to identify safety strategies using statewide traffic crash data well underway.

The State of Indiana had committed in 2004 to participate with the American Association of State Highway Transportation Officials (AASHTO) in a national effort to reduce the number of fatal and injury crashes. The strategy called for states to develop comprehensive highway safety plans incorporating strategies that would collectively save 5,000 to 7,000 lives and substantially reduce health care costs nationwide each year. Indiana’s safety team followed development of the

AASHTO Strategic Highway Safety Plan, and Integrated Safety Management Process (NHCRP Report 501).

In April of 2004, strategic planning began when a working group of agency representatives was established to begin development of a Comprehensive Safety Plan. As a starting point, the working group considered existing INDOT, regional, and local transportation highway safety planning, which included the State Section 402 Highway Safety Plan and Annual Performance Plan (HSP), the annual Motor Carrier Safety Assistance Program (MCSAP) Commercial Vehicle Safety Plan (CVSP), and the Traffic Records Coordinating Committee (TRCC) strategic plan for data improvement.

With the AASHTO Strategic Highway Safety Plan providing a baseline of national goals for evaluating emphasis areas for Indiana, The working group reviewed data from highway safety agencies and previous feedback gathered from stakeholder organizations at Safety Summits held in 2002 and 2003. In each summit, local jurisdictions were invited to participate in teams made up of Enforcement, Engineering, Education, and Emergency Response to look for opportunities to coordinate and cooperate with each other in the area of traffic safety. The summits provided input on local priorities in the areas of traffic safety.

The working group also evaluated data gathered and analyzed by the Center for the Advancement of Transportation Safety (CATS) on statewide highway safety trends. The final input came directly from the executive leadership of the agencies on the safety leadership team. A facilitator guided discussion on development of strategies for each emphasis area on who, what, why, how, as well as barriers to implementing each strategy and identifying success indicators for each. Additional data was gathered to refine the emphasis areas and helped develop strategies for each. The working group evaluated the 6 areas and 22 national goals of the AASHTO plan against Indiana's safety needs, ultimately selecting four categories of needs with 13 emphasis areas for Indiana.

The drafting of this document was lead by champions from FHWA Indiana Division and INDOT after study of other States' Comprehensive Safety Plans or SHSPs created before SAFETEA-LU as well as federal law, regulations, and guidance.

DATA ANALYSIS

The crash data analysis for the SHSP depends on information derived from the Indiana Vehicle Crash Records System (VCRS), which provides source data for production of a number of highway safety related reports. The status of the VCRS and ongoing efforts to improve the completeness and reliability of its data is documented in ICJI's 2006 Problem Identification Report.

The analysis for SHSP driver behavior emphasis areas mirrors Indiana's 2006 traffic safety action plan prepared by the Governor's Council on Impaired & Dangerous Driving. Purdue University's Center for the Advancement of Transportation Safety (CATS) conducted the analysis, which is prepared annually for submittal to NHTSA as required by 23 U.S.C. § 402.

Where there was no direct match between the existing traffic safety action plan and a SHSP emphasis area strategy, data analysis involved examination of base data from the VCRS and evaluating best practices and countermeasures which might be applied as based upon appropriate volumes of National Cooperative Highway Research Program (NCHRP) Report 500.

The crash management data evaluation reflects the ongoing efforts of ISP and INDOT's Intelligent Transportation Systems Office to develop Incident Management Coordination Plans for the Hoosier Helper traffic incident response units. The Hoosier Helpers operate from three Traffic Management Centers (TMCs) serving very congested urban areas centered in Gary, Indianapolis, and Clarksville.

The ongoing work of the TRCC to improve Indiana crash records data collection and analysis is also reflected in the SHSP.

EMPHASIS AREAS

Driver Behaviors -- encompassing graduated licensing and education for young drivers, reducing impaired driving, and increasing seat belt usage.

Emphasis Area 1: Develop Safer Young Drivers

Emphasis Area 2: Increase occupant protection

Emphasis Area 3: Reduce impaired drivers

Special Users/Vehicles -- encompassing non-motorized modes of transportation, motorcycles, and large trucks – essentially the most vulnerable road users, and the largest users, which pose significant risks to others.

Emphasis Area 4: Improve motorcycle safety

Emphasis Area 5: Reduce large truck crashes

Emphasis Area 6: Reduce bicycle and pedestrian crashes

Serious Crash Types/Locations -- encompassing vehicle-train crashes, highway intersection design and operation, head-on crashes, and across-median crashes.

Emphasis Area 7: Reduce "High Risk" rural road crashes

Emphasis Area 8: Minimize the possibility and consequences of leaving the roadway

Emphasis Area 9: Improve safety at intersections

Emphasis Area 10: Reduce crashes at highway railroad crossings

Crash Management -- addressing problems in crash response, clearing crashes, as well as in gathering and analyzing crash data

Emphasis Area 11: Enhance emergency services response to traffic crashes

Emphasis Area 12: Expedite crash clearance to reduce secondary crashes and congestion

Emphasis Area 13: Improve the quality of the data used to make safety improvement decisions

Various strategies will be employed to address each emphasis area. It should be noted that, the SHSP does not discuss every safety strategy currently implemented in the State, nor does it address every type of crash problem. The listed strategies are an array of ongoing, new, or proposed safety strategies, which contribute significantly to reaching the objectives of the plan. Each strategy was evaluated through a partnership approach from an array of diverse strategies identified through data analysis, application of the latest research, and best practices from across the nation across all of the disciplines of engineering, education, enforcement, and emergency services.

On the following pages, the 13 emphasis areas are detailed with background on why the SHSP addresses this particular problem area. The objectives and performance measures for each emphasis area are noted. The primary strategies to be implemented for each emphasis area are listed with a brief summary, performance measures, and a listing of the agencies involved in implementation.

DEVELOP SAFER YOUNG DRIVERS

Background

Newly licensed drivers with less than one year's experience have the highest crash rate of any driver group. Younger drivers between the ages of 16 and 19 years have the highest fatality rate per mile driven. A lack of driving experience, immaturity, drug and alcohol abuse, speeding, and propensity for risk-taking contribute to the higher crash statistics for teenaged drivers. In light of these facts, it is necessary to apply specific measures tailored to young drivers.

Objective: Reduce the number and severity of crashes involving teenaged drivers to 6.43 crashes per 10,000-licensed drivers by 2008

Strategies

- Work with the legislative branch to strengthen Indiana laws on young drivers

  The first six months after licensing is a particularly critical period. Because the probability of driver distraction increases with the number of passengers, the safety team proposes extending the current provision that younger drivers cannot carry passengers under the age of 21 for the first 90 days by adding "and only family members for the next 90 days before that restriction is lifted."

  Measuring the effectiveness of driver education programs is difficult because of the many factors that contribute to teenage driver crashes. Many research projects are under way, nationally and internationally, that show varying degrees of success for individual components of driver education, but some research suggests that driver's education does contribute to the critical first six months of licensed driving. Therefore, the safety team proposes a requirement that every young driver take a formal driver education course either through high school or through a private driving school before being licensed.

  Success indicator: Coordination with the legislative branch results in introduced bills

  Lead Agencies: ICJI, DOE, BMV

INCREASING OCCUPANT PROTECTION

Background

In 2004, 34% of Indiana's 947 fatalities involved drivers or passengers that were not properly restrained. Seat belt usage in Indiana is steadily growing, from 61.8% in 1996 to 81.2% in 2005.

Objective: To increase the observational safety belt usage rate in all passenger vehicles, including pickup trucks, sport utility vehicles, and vans to 88.0 % by 2008.

Strategies

- Primary Seat Belt Enforcement

  It is well established that safety belt use saves lives and prevents injuries. Between 1975 and 2000, safety belts prevented 135,000 fatalities and 3.8 million injuries, saving $585 billion in medical and other costs nationwide. If all vehicle occupants had used safety belts during that period, nearly 315,000 deaths and 5.2 million injuries could have been prevented – and $913 billion in costs saved.

  Success indicator: Number of un-belted occupants decreases

  Success indicator: Number of fatalities where the person was not properly restrained

  Lead Agencies: ICJI, ISP

- Child Seat Installation Programs

  A new law effective July 1, 2005 requires children to ride in the appropriate safety seat until their 8th birthday. This is often a booster seat for those over the age of four. This is in addition to the current law where children up to age 4 are already required to be in a safety seat and must remain belted through age 12. This applies to all vehicles including trucks and SUVs.

  Success indicator: Number of safety seat clinics performed

  Success indicator: Increase in child safety seat usage

  Lead Agencies: ICJI

- National Awareness campaign targeted at Commercial Motor Vehicles

  Federal Motor Carrier Safety Regulations (FMCSRs) require CMV drivers to wear safety belts. Section 392.16 of the FMCSRs (49 CFR 392.16) states, "A commercial motor vehicle which has a safety belt assembly installed at the driver's seat shall not be driven unless the driver has properly restrained himself/herself with the safety belt assembly." Still a Federal Motor Carrier Safety Administration study shows fewer than half of all commercial vehicle drivers wears their safety belts (48%).

  Success indicator: Increased usage of belts in Commercial Motor Vehicles

  Lead Agencies: FMCSA, ISP, DOR, INDOT, CATS

- Work with the legislative branch to strengthen Indiana laws on seat belt enforcement

  Current Indiana law requires adults riding in the front seat of cars to wear seat belts. Nevertheless, drivers of pickup trucks and any other vehicles with a truck license plate are exempt. This loophole in state law has at its root the time when pickup trucks truly were fundamentally work vehicles, before the birth of the Sport Utility Vehicle (SUV), based on a truck chassis, but more commonly used for family transportation. SUV's are a popular vehicle of choice for many city-dwelling Hoosiers. However, state law did not foresee the trend of suburban parents driving their families around in vehicles that qualify for truck license plates.

  Success indicator: Coordination with the legislative branch results in introduced bill

  Lead Agencies: ICJI, ISP, BMV

REDUCING IMPAIRED DRIVERS

Background

In 2004, 32% of Indiana's 947 fatalities involved alcohol. Although Indiana has been successful in reducing the incidence of driving while impaired by alcohol or other drugs, such behavior remains a significant safety problem. The percentage of alcohol related fatalities has been on a downward trend from 41% in 1998 to 32% in 2004. Nevertheless, this is an unacceptable toll and additional efforts are needed to target this problem.

Nationwide in 2003, 40% of fatal crashes involved alcohol. For fatal crashes occurring from midnight to 3 a.m., 77 % involved alcohol. - [NHTSA Crashes; 2003]

Objective: Reduce the number of crashes involving impaired drivers from a baseline of 0.47 per 100 MVMT in 1996 (312 fatal crashes) to 0.23 per 100 MVMT in 2008

Strategies

- Impaired driving national mobilizations and media campaigns

  Impaired driving is a violent crime that can kill. Every seven ½ minutes in Indiana there is a crash because of an impaired driver. Reducing alcohol-related traffic fatalities is one of our nation's top traffic safety priorities.

  Success Indicator: Alcohol-Related Fatal Crashes per 100 MVMT

  Lead Agencies: ICJI, ISP

- Improve educational outreach to Prosecutors & Judges

  This initiative seeks to reduce obstacles to obtaining impaired driving convictions and to help prosecutors and judges apply sanctions in a consistent manner with a focus on reducing plea bargaining, diversion, or deferral programs and other means used by offenders to avoid permanent DUI records.

  Success Indicator: Conviction Rates

  Lead Agencies: ICJI, ISP, FMCSA

IMPROVING MOTORCYCLE SAFETY

Background

In 2004, 11% of Indiana's 947 fatalities were motorcycle drivers and passengers. Motorcycle crashes and fatalities have begun to rise in the last 5 years. Motorcycle ridership is growing, in particular among males from age 44 to 55. Motorcycle crashes are often severe with 80% resulting in injury or fatality. Of those involving another vehicle, front angular crashes were most frequent. Drivers of other vehicles that collide with motorcycles frequently report not observing the motorcycle prior to the collision.

Objective: Reduce the number of motorcycle fatalities to 85 by 2008 and 70 by 2010

Strategies

- Improve motorists' awareness of motorcycles

  With all the distractions facing a driver, the need for motorist awareness of motorcyclists is vital to cyclist safety. In nearly two-thirds of all motorcycle accidents involving another vehicle, the other driver is at fault. Public awareness efforts are necessary to appeal to drivers communicating their role and responsibility to help ensure safety for motorcyclists.

  Success Indicator: Reduce the number of 2 vehicle collisions (car/motorcycle) by 10% by 2008 and by 25% by 2010

  Lead Agencies: DOE, ICJI, ISP, BMV

- Improved licensing for motorcyclists

  Indiana requires motorcyclists to have a specialized license (motorcycle endorsement). Still a significant number of motorcycle crashes involve improperly licensed riders.

  Success Indicator: Reduce the number of motorcycle fatalities involving improperly licensed riders by 10% by 2008 and further reduce to match national average by 2010

  Lead Agencies: DOE, ICJI, BMV, ISP

- Increased motorcycle driver training opportunities

  Motorcycles are specialized vehicles and require specialized knowledge and skill to operate properly and safely. Since the Indiana motorcycle rider education course program started in 1987, motorcycle accidents and injuries have dropped dramatically and have remained significantly lower than before the program started. Successfully completing a rider education course in Indiana waives the skills test required for a motorcycle endorsement.

  Success Indicator: Increase the number of people taking a training course from 7,000 in 2005 to 8,000 in 2008

  Lead Agencies: DOE, ICJI, ISP

- Promote voluntary use of all protective gear

  In 2004, 75% of motorcycle fatalities involved unhelmeted riders. The state once had a law requiring helmet use by all riders, but it was rescinded in 1978. Currently, Indiana requires all motorcycle riders (operators and passengers) who are under 18 to wear a helmet. It also requires all operators riding on a motorcycle permit (regardless of age) to wear a helmet and eye protection. Permit holders are prohibited from carrying passengers. Increased voluntary use of helmets could save lives and prevent devastating and debilitating head injuries. Wearing a motorcycle helmet reduces a rider's risk of death by 29% and nonfatal injury risk by 15%.

  Success Indicator: Increase voluntary use of protective gear (helmets) to match other states with similar helmet laws -- 35% voluntary use by 2008 and 50% by 2010

  Lead Agencies: DOE, ICJI, ISP, BMV

REDUCE LARGE TRUCK CRASHES

Background

In 2004, 17% of Indiana's 947 fatalities involved large trucks. Large trucks account for 9.67 billion miles traveled each year in Indiana. When large trucks are involved, the crashes typically are more severe. In multiple vehicle crashes, the occupants of other vehicles are more often the ones killed or injured. Major concerns include driver fatigue, the safety condition of the large vehicles, and failure of other drivers to recognize the unique operating characteristics of these vehicles.

Objective: Reduce the number of crashes involving large trucks, 10% by 2008 from 2004 baseline

Strategies

- Large Truck Awareness Education for motorists (i.e. Share The Road)

  The Share the Road Safely program strives to improve the knowledge of all highway users to minimize the likelihood of a crash with a large truck, and reduce the consequences of those that do occur.

  Success Indicator: Education program updated and deployed

  Lead Agencies: DOR, FMCSA, ISP, BMV, ICJI, INDOT

- Work with the legislative branch to strengthen Indiana laws on CMV Safety Civil Forfeiture and Deferral

  Both Commercial Motor Vehicle (CMV) drivers and their respective motor carriers currently adjudicate both moving violations and safety violations through statewide court systems, which possess little knowledge of an increasingly technical and highly regulated transportation industry.

  Federal and State prohibitions currently exist for CMV drivers from participation within Court sponsored diversion, deferral programs. Unfortunately, limited knowledge of the CMV safety regulations by prosecutors and judges translates into CDL drivers still participating in diversion deferral programs in spite of outreach efforts to the courts by the Bureau of Motor Vehicles, (BMV). The BMV has realized limited success with educational out reach due to high rate of turnover in prosecutors and judges throughout the state responsible for compliance with State statutes.

  There is no current statewide ability to identify problem motor carriers, or commercial drivers (i.e. chronic safety violators, permit, overweight, traffic). ISP CVED, Department of Revenue (DOR), and BMV need to be able to maximize limited resources targeting unsafe CMV operations and drivers. Current Indiana statute provides for the DOR to be able to penalize chronic overweight carriers, however obtaining the information is not easy, nor is there a formalized "due process" in place to enforce the current statute as required.

The Indiana State Court Administration is currently working on developing a statewide case management system in order to comply with federal mandates that require CDL conviction processing from all of Indiana's courts to the BMV within 10 days.

Motor Carrier Safety enforcement effectiveness was identified by the State Senate as there exists a filed Senate Resolution (#0050 in 112th General Assembly 2002) urging the establishment of a commission to study transportation issues, including a civil process of adjudicating commercial trucking related safety violations through an administrative process, and the effectiveness of combining commercial truck enforcement activities. It further instructs that the commission shall operate under the direction of the legislative council and that the commission shall issue a final report when directed to do so by the council.

Indiana conducts both Compliance Review and Safety Audits (in depth safety inspections) for the federal Dept of Transportation on interstate carriers. No program exists for the thousands of intrastate motor carriers operating within the State of Indiana.

Success Indicator: Coordination with the legislative branch results in introduced bill

Lead Agencies: ICJI, DOR, FMCSA, ISP, BMV

REDUCE DEATHS AND INJURIES TO NONMOTORISTS

Background

In 2004, 9.3% of Indiana's 947 fatalities involved nonmotorists. Nationwide, almost one-fourth (22 %) of all children between the ages of 5 and 9 years who were killed in traffic crashes were pedestrians. Nearly one-fifth (17 %) of all traffic fatalities under age 16 were pedestrians, and 7 % of all the people under age 16 who were injured in traffic crashes were pedestrians. The 622 bicyclist deaths nationally in 2003 accounted for 1 % of all traffic fatalities nationwide during the year.

Objective: Reduce the number of crashes involving bicycles and pedestrians, 10% by 2008 from 2004 baseline

Strategies

- Safe Routes to School (SRTS) program

  Today, fewer than 15 % of all school trips are made by walking or bicycling, while one quarter are made on a school bus, and over half of all children arrive at school in private automobiles. This contributes to traffic congestion around schools. Safety issues are a big concern for parents, who consistently cite traffic danger as a reason why their children are unable to bicycle or walk to school. INDOT will implement the federally required SRTS program to encourage and increase safer bicycle and pedestrian travel to schools.

  Success Indicator: Number of SRTS funded projects completed

  Lead Agencies: INDOT, FHWA

- Statewide Greenways Vision and Implementation Plan

  It is generally known that bicycle and pedestrian travel is not being used as extensively as could be in the United States. In a time-obsessed world, the few minutes in a car to make a 3-mile trip often wins out to the 15 minutes by bicycle, and longer by foot. Even when time is not a factor, the increased risk of sharing the roadway with automobiles and trucks is a deterrent to bicycle and pedestrian travel. Greenways dedicated to such travel safely separate these slower forms of travel contributing to reducing automobile traffic congestion and pollution, as well as increasing health benefits for increased numbers of riders and walkers.

  Success Indicator: Plan implemented

  Lead Agencies: DNR, INDOT

- Comprehensive design standards and guidelines for pedestrian/bicycle facilities

  Walking is so basic to human activity that it has frequently been overlooked in the building of transportation systems. With a renewed public interest in creating places that are welcoming, safe, and enjoyable, steps are needed to address designing compatible transportation systems that result in communities where people feel safe to walk, bicycle,

recreate, and socialize. INDOT will establish pedestrian/bicycle facility standards in the Indiana Design Manual.

Success Indicator: Standards and guidelines developed

Lead Agencies: INDOT, FHWA

REDUCE HIGH RISK RURAL ROAD CRASHES

Background

In 2004, 64% of Indiana's 947 fatalities occurred on rural roads. These include state and locally maintained roads. Often on rural roads, there are no shoulders or little recoverable shoulder. In general, travel speeds are higher. Overturning or striking a fixed object is a greater risk on these roads. Keeping vehicles on the roadway will have a significant impact on highway safety.

The FHWA defines a `high risk rural road' as any roadway functionally classified as a rural major or minor collector or a rural local road on which the accident rate for fatalities and incapacitating injuries exceeds the statewide average for those functional classes of roadway; or that will likely have increases in traffic volume that are likely to create an accident rate for fatalities and incapacitating injuries that exceeds the statewide average for those functional classes of roadway.

Objective: Reduce the severity and number of crashes on rural roads 10% by 2008 from 2004 baseline

Strategies

- Local Transportation Assistance Program HELPERS

  LTAP HELPERS involves performing safety audit/ reviews, documentation, and funding requests for municipal agencies seeking federal funding. In 2005, 100% of the projects submitted with LTAP assistance received federal approval with the value of the projects totaling approximately $1.6-million.

  Success Indicator: Number of LTAP HELPERS Reviews involving "High Risk Rural Roads"

  Lead Agencies: LTAP, INDOT

- Safety Investigation Teams

  The New Office of Roadway Safety & Mobility of INDOT's Planning Division will employ an interdisciplinary approach to prioritize "High Risk Rural Road" projects for the State highway system through data analysis and/or targeted Safety Investigation Teams.

  Success Indicator: 100 State projects programmed by 2008

  Lead Agencies: INDOT, FHWA

MINIMIZE THE POSSIBILITY AND CONSEQUENCES OF LEAVING THE ROADWAY

Background

In 2004, 56% of Indiana's 947 fatalities involved vehicles leaving the road's travel lane. In rural areas, overturning or striking a fixed object is an even greater risk. Implementation of successful methods to keep vehicles on the roadway will have a significant beneficial impact on highway safety.

Objective: Reduce the severity and number of crashes of vehicles leaving the roadway 10% by 2008 from 2004 baseline

Strategies

- Initiate a program to reduce cross median crashes
  Highway crossover accidents are becoming more common as traffic increases on Indiana's roadways. INDOT seeks to identify high cross-median crash locations and evaluate the proper countermeasures. As an example, deployment of highway median barriers is one solution. Indiana has deployed three test sites of post-and-cable barriers in existing medians along divided multi-lane roads identified as high crossover crash locations. The cables catch vehicles, preventing them from crossing over into opposite direction traffic or bouncing back into same-direction traffic. INDOT is evaluating the efficiency of these median cable barriers to address this significant and serious type of crash.

  Success Indicator: Reduce cross median crashes 10% by 2008

  Lead Agencies: INDOT, FHWA

- Install Center and Edge line rumble strips

  The FHWA actively endorses the use of rumble strips as a way to reduce run off road crashes. Of the several varieties of rumble strips, edgeline and centerline are only two. This countermeasure relies on noise and vibration to attract the attention of a driver who has left the travel lane. In many cases, rumble strips can alert the driver in time to avert a road departure.

  Success indicator: Pilots completed

  Success Indicator: All applicable contracts specify installation of center and edge line rumble strips

  Lead Agencies: INDOT, FHWA

- Installation of the Safety Edge

  Drivers that slip off a resurfaced road onto an unimproved shoulder are likely to lose control as they attempt to drive back onto the roadway. The pavement edge creates a "scrubbing" condition that must be overcome through over-steering. As drivers over-steer to reenter the roadway, they are prone to lose control of the vehicle. Compounding the danger, the rear wheel may catch the edge of the shoulder, swinging the car around.

These actions may cause the car to veer into the adjacent lane, where it may collide or sideswipe oncoming cars, overturn, or run off the road and crash. The Safety Edge is a standard contract specification requiring a 30-35º angle along each side of the roadway in all resurfacing projects to assure more safely recoverable pavement edge.

Success Indicator: Pilots completed

Success Indicator: All applicable contracts specify installation of Safety Edge

Lead Agencies: INDOT, FHWA

IMPROVE SAFETY AT INTERSECTIONS

Background

In 2004, 27% of Indiana's 947 fatalities occurred at intersections. Because of the high frequency of potential vehicle/vehicle and vehicle/pedestrian conflicts at intersections, a significant portion of our highway crashes occur at these locations. About one-fourth of fatal highway crashes and over one-third of all highway crashes occur at intersections.

Objective: Reduce number of crashes at intersections 10% by 2008 from 2004 baseline

Strategies

- Signal timing Improvements

  Traditionally, traffic signal timing and phasing schemes are established with the primary objective of efficiently moving traffic. Certain timing, phasing, and control strategies can produce safety benefits with only marginal adverse effects on delay or capacity. Signalization improvements may include adding phases, lengthening clearance intervals, eliminating or restricting higher-risk movements, and coordinating signals.

  Success Indicator: Complete six corridor signal time improvements by 2008

  Lead Agencies: INDOT, FHWA

- Improve Signal Visibility and Compliance

  Some crashes at signalized intersections occur because drivers are unaware of the presence of an intersection or are unable to see the traffic control device in time to comply. These crashes are generally rear-end or angle collisions. The ability of approaching drivers to perceive signalized intersections immediately downstream can be enhanced by signing, delineation, and warning devices. Other strategies to improve the visibility of an intersection include providing lighting, improving the visibility of the signals, and using devices to call attention to the signals.

  Success Indicator: Reduction in Red Light Running Crashes

  Lead Agencies: INDOT, FHWA

- Initiate alternative intersection design program

  Some signalized intersections may have significant crash problems for which the only alternative is to change the nature of the intersection itself. These types of projects include providing indirect left turns, converting intersections to roundabouts, converting two-way streets to one-way pairs, and constructing interchanges.

  Success Indicator: Program initiated and six locations programmed by 2008

  Lead Agencies: INDOT, FHWA

REDUCE CRASHES AT HIGHWAY RAILROAD CROSSINGS

Background

In 2004, 159 crashes occurred at public highway-railroad crossings, which resulted in 25 deaths and 38 injuries. Although these crashes represent a small fraction of Indiana's overall highway traffic toll, they are a serious crash type where cars and trucks are always at a disadvantage. Collisions between motor vehicles and trains generally result in a much higher proportion of fatalities and injuries than collisions between two motor vehicles.

A sad commentary on Rail-Grade Crossing safety is that roughly half of all crashes occur at crossings where active warnings devices (lights and gates) are in operation, with drivers moving around the warnings in an attempt to beat the train. This dangerous activity is often associated with congested urban roadways.

Objective: Reduce car-train collisions 10% by 2008 from 2004 baseline

Strategies

- Highway-Rail Hazard Elimination Program

  INDOT administers federal highway safety funds that can be used to install active warning devices such as lights and gates. Under this program, projects are selected using a benefit / cost analysis of potential projects in order to make the most cost effective use possible of the available funds. A separate program assists with the expenses of improving pavement markings, signage, or lighting. A railroad grade crossing can become a candidate for removal when delays at crossings significantly degrade auto traffic flow.

  Success Indicator: 80+ projects constructed on an annual basis

  Lead Agencies: INDOT, FHWA, FRA

- Highway-Rail Crossing Public Education

  To increase motorists' awareness, the Operation Lifesaver Program has been working with law enforcement agencies to help prevent grade crossing collisions. It works directly with many public and private groups to promote better driver education and understanding of the dangers at rail crossings and along railroad tracks in general. They are available to make presentations to schools, civic and social groups, bus and truck drivers, and others.

  Success Indicator: Number of OLI presentations

  Lead Agencies: OLI, INDOT, FHWA, FRA, ICJI

ENHANCING EMERGENCY SERVICE RESPONSE TO CRASHES

Background

In spite of the efforts to eliminate crashes, these unfortunate events continue to occur. It is important that timely medical attention be given to crash victim that involves rapid notification and deployment of emergency services. This has improved over recent years with many drivers having cell phones. In addition, nationwide, fires occurred in 0.1 % of the vehicles involved in all traffic crashes in 2003. For fatal crashes, however, fires occurred in nearly 3 % of the vehicles involved. - [NHTSA Vehicles; 2003]

Objective: Reduce response time to crash scenes

Strategies

- Install emergency vehicle traffic signal preemption on response routes to Interstate system

  Emergency vehicle preemption may allow for reduced response times when emergency vehicles must pass through high volume intersections. It may also reduce the number of emergency vehicle crashes. Reduced delays at signalized intersections could possibly result in cost savings by allowing response that is more efficient over increased coverage areas.

  Success Indicator: 20 EMS priority routes identified and preemption installed by 2008
  Lead Agencies: INDOT, IDHS, ISP

- Complete Deployment of Enhanced 9-1-1

  It is important for 911 operators to know where callers are so that help can find them as quickly as possible. Enhanced 911 (E911) enables emergency service providers to reach the location of a wireless 911 call quickly with the least amount of confusion and delay. The Federal Communications Commission (FCC) determined this issue to be so important that it mandated E911 standards and set phased deadlines for system upgrades in 1996.

  Formed in 1998 by the Indiana General Assembly, the Indiana Wireless E911 Advisory Board administers the Indiana Wireless Emergency Telephone System Fund, which is used to reimburse county 911 authorities and wireless carriers for E911 system enhancements. The board is working to fully implement E-9-1-1 across Indiana as quickly as possible.

  Success Indicator: Enhanced 9-1-1 operational statewide

  Lead Agencies: IWAB

EXPEDITE CRASH CLEARANCE TO REDUCE SECONDARY CRASHES AND CONGESTION

Background

Traffic crashes vary widely in size and severity. Incident response is difficult, and it is important to manage the scene of the crash and the traffic. Congestion resulting from the incident may lead to residual crashes. To resolve them in the safest, quickest, and most cost-effective manner requires integrated policies, strategies, and technologies of responders to ensure rapid detection, response, and clearance of the crash. The random and variable nature of traffic crashes requires ongoing planning and coordination involving, Transportation agencies, Law Enforcement, Fire and rescue, Towing and recovery, Emergency medical service, and Environmental Protection Agencies.

Objective: Increase safety by reducing incident-induced congestion and secondary crashes through completion of initiatives

Strategies

- Highway Incident Management Coordination Plan

  Realizing a safe, reliable, and secure transportation system, means operating our roadways better by having engineering, education, enforcement, and emergency medical responders working in harmony with each other. The four "Es" all play a role in ensuring that incidents are quickly detected, responded, and cleared with minimum disruption to traffic flow. All of this is done giving first priority to the safety of the on-scene responders and the motoring public. Application of intelligent transportation systems (ITS) technologies, better planning for coordinated operations, and consistently measuring and evaluating performance is seen as a way to get the most out of our highway infrastructure investment – safely.

  Success Indicator: Complete Incident Management Plan

  Lead Agencies: INDOT, IDHS, ISP, IDEM

- Enhance integrated interoperable emergency communications

  Project Hoosier SAFE-T (Safety Acting for Everyone - Together) is designed to provide interoperable communications among local, state, and federal public safety agencies during emergency response. While Hoosier SAFE-T arose from a decision to strengthen community safety and security, combat crime, natural disasters and terrorism, it will also contribute to improved response to and incident coordination of traffic crashes. The network infrastructure installation is underway with completion anticipated in 2007.

  Success Indicator: Hoosier Safe-T installed and operational statewide by 2008

  Lead Agencies: IPSC

IMPROVE THE QUALITY OF THE DATA USED TO MAKE SAFETY IMPROVEMENT DECISIONS

Background

High quality data is needed to provide information that is critical to the development of programs and projects that maintain the safety and efficiency of Indiana's roadway network. Currently the police reported crash records are the main data source. Reliance on data is increasing as budgets are decreasing and making informed decisions are necessary to yield the best performance for our investments. Continued emphasis on the improvement of Indiana's safety data is needed to implement programs and projects that will lower the number of fatal traffic crashes.

Objective: Improve the timeliness, accuracy, and quality of the statewide crash database through reduced collection and coding errors.

Strategies

- Improve the efficiency and accuracy of data in the vehicle crash record system

  Accurately collecting, compiling, and analyzing traffic crash data is a critical challenge facing highway safety leaders nationwide. Knowing how, when, where, and why traffic crashes occur is the base of comprehensive traffic safety analysis. It is important to analyze crash records so that informed decisions can be made about where to invest limited resources. This data collection also provides the information necessary to evaluate whether or not initiatives are having a positive effect.

  Indiana seeks to improve the efficiency of its statewide crash database. This will expedite analysts' efforts to identify developing crash problems. Reliability of the data is vital to the process. Crash data that is collected, recorded, or transmitted incorrectly can leave gaps in an area's crash history, or worse, incorrectly identify locations as trouble spots. The more accurate crash data is for an area, the easier it is to target areas needing improvement. The crash data system will perform problem identification and countermeasure analysis as required by SAFETEA-LU.

  Success Indicator: Improved reliability of the database

  Lead Agencies: ISP, ICJI, INDOT, IDHS, NHTSA, FHWA, FMCSA

- Implement National EMS Information System (NEMSIS) EMS data set

  The NEMSIS Project is an effort to create a standardized National EMS Database set. The effort will define EMS and pre-hospital care in order to improve patient care and EMS curriculum and defining a standard on which to measure care. Agencies everywhere will be able to share key elements of their data nationally.

  Success Indicator: NEMSIS compliant reporting statewide by 2008

  Lead Agencies: IDHS, ICJI, NHTSA

- Implement the use of GPS units for locating crashes by latitude and longitude

The more complete a traffic crash record and analysis system is, the greater the potential for safety improvement. Seeking to improve the quality of information collected and how it is submitted and interpreted must consider the fact that recording accident data is only one part of a police officer's duties at a crash scene. It is desirable to improve the quality of data without adding to the work involved in recording it. The use of mobile computers with Global Positioning Systems (GPS) is seen as a way to improve the quality of critical traffic accident location data.

Success Indicator: Percentage of reports with accurate Lat/long location from a GPS unit

Lead Agencies: ISP, ICJI, INDOT, IDHS, NHTSA, FHWA, FMCSA

- Promote the use of Electronic Reporting of crash reports

  The Traffic Records Committee actively encourages local police agencies to submit crash records electronically, to reduce the chances of coding errors during transcription, and speed input into the vehicle crash database. The electronic version of the crash report was released in October 2003 and now accounts for approximately 35 % of crash reports received by ISP. There is an active campaign with chiefs of police and sheriffs to obtain their understanding of the importance and criticalness of quality data and emphasize the value of electronic reporting.

  Success Indicator: Percentage of reports submitted electronically

  Lead Agencies: ISP, IDHS, ICJI, INDOT, NHTSA, FHWA, FMCSA

- Improve Access to crash records for local agencies

  The VCRS database is available via a secure Web site to data users authorized by ISP. The system is day current in data entry, has introduced a "Street Smarts" drawing package, and has a mapping tool associated with the database.

  Success Indicator: Number of agencies accessing crash records through the internet

  Lead Agencies: ISP, ICJI, INDOT, IDHS, NHTSA, FHWA, FMCSA

- Develop a data report on the health/medical outcomes of motor vehicle crash victims

  Through collaboration with ISDH and IDHS, develop a process for those agencies to provide INDOT with an annual report of health/medical outcomes of motor vehicle crash victims treated at the 7 Indiana trauma centers. Through development of a new state trauma registry, aggregate data can be compiled and analyzed on people injured in crashes. Review of such data can be helpful in examining emergency response, transport, and medical care rendered as it is related to mortality, morbidity, and health/medical outcomes, as well as contributing to the design of traffic safety interventions.

  Success Indicator: Process developed and reports generated

  Lead Agencies: ISDH, IDHS

IMPLEMENTATION

As the agency responsible for the SHSP, INDOT will serve as the overall monitor of Indiana's coordinated highway safety efforts under 23 U.S.C. § 148. By virtue of office, the INDOT commissioner serves as the champion of the SHSP and the leader of the executive Safety Leadership Team. The commissioner coordinates with the governor of the State and other State agency executives to ensure the success of the SHSP.

Within INDOT, the Strategic Safety Project Manager is tasked with overseeing the ongoing implementation, evaluation, and required reporting on the SHSP. The Strategic Safety Project Manager serves as the champion for the SHSP working group maintaining the group's cohesion, focus, and effectiveness.

Each discipline – engineering, education, enforcement, and emergency medical response -- will have a team leader. The INDOT manager of the Office of Roadway Safety and Mobility will serve as team leader for engineering safety strategies. The ICJI Director of Traffic Safety will serve as team leader for education strategies. The ISP Major for the Field Enforcement Division will serve as team leader for enforcement strategies. The IDHS EMS Data Registry Program Manager, will serve as team leader for emergency medical response strategies.

Where applicable, interdisciplinary and/or interagency development teams will be formed for implementation and monitoring of strategies. Resources are a crucial factor in the implementation and deployment of this strategic plan. The resource allocations made by each agency or organization toward these strategies will be part of a continuing analysis to determine the progress toward meeting the goal or the effectiveness of the plan.

Highway infrastructure projects are identified in Indiana's Highway Safety Improvement Program (HSIP). Population of the safety program of infrastructure projects by the Office of Roadway Safety and Mobility (ORSM) began with a screening of existing projects using safety criteria of INDOT's schedule of State system projects. Projects were excluded if they had a cost over $5-million or if development had completed the "ready for contracts" stage. The projects were then scored upon nine criteria . . .

Safety, based upon nominal safety calculations using a minimum of 3 years of crash history
Congestion, based upon a basic load/carry highway capacity calculation
Standards, based upon compliance with current INDOT design standards
Value, based upon cost effectiveness review by engineering staff
Road Class, based upon route system classification
INDOT district preference, based upon engineering judgment
Public interest, based upon support from State or local elected officials and the public
System coordination, based upon the projects relation to other projects
Project development stage, based upon how close to completion the project is in development

This analysis established INDOT's first HSIP, providing an initial schedule of highway safety improvement projects for hazard correction or prevention for funding under 23 U.S.C. § 148. The schedule of projects is to be updated annually, with every new candidate project receiving screening, evaluation, and analysis before inclusion in the schedule. For candidate projects proposed after the approval of the SHSP, the ninth criteria, " will be changed to, "Strategic priority, based upon if a project, specifically addresses or contributes to a SHSP emphasis area strategy."

Highway-railroad grade crossing projects funded under 23 U.S.C. § 130, will be programmed based upon established Federal Railroad Administration crossing safety prediction calculations. Utilizing highway and railroad traffic volumes and crash data, predicted crash rates for grade crossings establish the level of need for improvement and a benefit/cost analysis completes project selection.

Initial projects for the newly created High Risk Rural Roads (HRRR) set-aside sub-program, funded under 23 U.S.C. § 148 were selected from INDOT's existing schedule of State and local system projects. Qualifying projects on rural major collectors, rural minor collectors, and rural local roads were prioritized based upon their rate for fatalities and incapacitating injuries in excess of the statewide average for their functional class.

Future HRRR projects will be identified by VCRS data analysis. If an identified HRRR need is not addressed by a project, ORSM will initiate a candidate project. If it is on the State System, ORSM will initiate project development. If it is on a local system, ORSM will contact the agency with jurisdiction about the need to address a HRRR project, and its priority in the State. To the extent permitted, INDOT will assist the local jurisdiction with project development.

EVALUATION

Fundamental to the long-term success of the SHSP, the core disciplines of the 4Es need the support of three additional E's, Exemplary Leaders, Effective Laws, and Evaluation. To that end, each strategy development team will report quarterly to their respective discipline team leader with a summary of the activities and progress in carrying out the strategy. The discipline team leaders and working group champion will prepare a progress report for the executive Safety Leadership Team twice a year with an evaluation and update on strategies.

The executive Safety Leadership Team will review the SHSP annually, and as necessary make changes, to reflect successful strategies and/or the need for new or enhanced strategies, in order to make the SHSP a living document. Just as the SHSP will be a source of scoring for candidate HSIP infrastructure projects, conversely, the frequency and type of projects selected for the HSIP may identify emerging or changing emphasis areas for future SHSP documents.

The annual review also provides an opportunity for the executive leadership to address needs for modification in State Statute, Administrative Code, and agency policies to enhance highway traffic safety, coordinating its efforts with the Governor's Council on Impaired and Dangerous Driving established under Executive Order 91-10.

NEXT STEPS

At a meeting held in Indianapolis on July 26, 2006, the safety working group discussed the DRAFT SHSP with highway traffic safety stakeholders. The meeting generated a number of suggestions for improving the DRAFT plan. Chief among the suggestions was an interest on the part of many stakeholders for a more active involvement in the safety planning activities of the safety working group. The executive Safety Leadership Team and the SHSP working group are urged to seek out additional highway safety partners and conduct an ongoing outreach to local communities and Metropolitan/Regional Planning Organizations.

Another area of Indiana's Highway Safety Team needing development is, involving as partners, groups with specialized interests. Health care providers that treat and rehabilitate highway crash victims can add important insight into the human and financial costs of crashes, which may influence how we prioritize and address crash problems.

While we have made tremendous strides over the last several decades, there is more to do. A national study funded by The Centers for Disease Control and Prevention has confirmed that trauma centers staffed with specialized medical teams and equipment save lives. The study found patients treated at trauma centers are more likely to survive their injuries and are more likely to be alive a year later. However, trauma centers are expensive and tend to be located only in large hospitals in major metropolitan areas.

As of August 2006, Indiana has seven American College of Surgeons (ACS)-verified Level I or Level II trauma centers: Methodist, Wishard Memorial, and Riley Hospital for Children in Indianapolis, St. Mary's Medical Center, and Deaconness Hospitals in Evansville, Memorial Hospital in South Bend, and Parkview Hospital in Fort Wayne. The state's only ACS-verified pediatric hospital is Riley Hospital for Children, but Methodist Hospital and St. Mary's Medical Center are verified as having both Adult and Pediatric capabilities. Work needs to advance toward linking ground EMS and medical air transport with the appropriate advanced care facilities statewide.

The Association of Public-Safety Communications Officials can provide insight into issues arising from operation of communications systems used to safeguard the lives and property of citizens. Their participation will be integral as Indiana moves toward implementation of the Next Generation 9-1-1 (NG 9-1-1) initiative.

Text, data, images, and video are increasingly common in personal communications and are critical to future transportation safety and mobility advances. However, the 9-1-1 system of the 1970s was created to transmit voice media only and was not designed to handle the challenges of multimedia communication in a wireless, mobile society. The goal of NG9-1-1 is to enable the transmission of voice, data, or video from different types of communication devices for use within emergency responder networks.

Indiana's Coroners can provide insight and data on contributing factors in traffic crash deaths. Chief among the coroner's duties are determining the identification of victims as well as the cause and manner of their death.

The operators of railroads in Indiana are stakeholders in highway traffic safety and should be encouraged to participate in discussions of addressing safety at highway-rail grade crossings.

Other products of the stakeholder meeting were comments on the emphasis areas and strategies identified to address them. One strategy identified in the DRAFT plan was determined to need more study before inclusion in the SHSP, that of reducing the number of Impaired Motorcycle drivers.

The safe operation of a motorcycle requires heightened mental and physical skills to maintain control of the bike. Research suggests that Blood Alcohol Content (BAC) limits for automobile operations (BAC < .08) may be too high for safe motorcycle operation. In 2004, 33% of Indiana's motorcycle fatalities involved operators with a BAC > .01. While impaired motorcycle riding has been identified as a significant problem at a national level, the data in Indiana is incomplete

principally because a low percentage of motorcycle operators involved in crashes are tested for BAC.

In presenting the fact that not all safety initiatives are represented in the SHSP, it was highlighted that work zone safety probably has never had greater attention and resources allocated to it by INDOT than it does today. Stakeholders pointed out that while that is true for the state highway system, a great many work zone crashes occur on local roadways or involve non-highway work of underground or overhead utilities. They asked that for the next SHSP, the safety working group examine work zone safety in greater detail and give strong consideration to including it as an SHSP emphasis area.

Another future emphasis area suggested by stakeholders was access management planning. Access management is the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway that provides a balance of the need for access to homes and business with the need for safe operation and mobility on the roadway. In particular, the stakeholders expressed a desire for establishing enforceable access standards.

INDOT has statutory authority to promulgate administrative rules and regulations for curb cuts. Indiana regulates curb cuts by requiring a permit from INDOT and requiring compliance with INDOT's rules and requirements. Indiana courts have consistently held that access points can be regulated since a property owner is not entitled to unlimited access at all points along a highway. Potentially, INDOT could use its statutory authority to implement an access classification system into the Driveway Permit Manual, the Highway Design Manual, and the statewide mobility corridor program.

After a review of the SHSP by executive leadership it was determined that for strategies that would require modifying the Indiana Code, there needs to be additional safety team discussion and coordination with the legislative branch. The four such strategies identified in the SHSP, each carries a success indicator of, "Coordination with the legislative branch results in introduced bill."

Within each participating organization there needs to be a corporate culture change away from insular agency-centric problem solving and toward shared responsibility for highway safety with an interagency approach. One element in this change of corporate culture involves integrating safety at the earliest levels of transportation planning. Transportation Safety Planning (TSP) is designed to better integrate safety into transportation decision-making on a system-wide basis as well as at specific locations. It incorporates transit, bicycle, and pedestrian safety improvements in addressing current safety problems and preventing future problems. The Safety Leadership Team should work to integrate TSP into the State Long Range Plan, the Indiana Statewide Transportation Improvement Program (INSTIP), and the Transportation Improvement Programs (TIP) developed by Metropolitan Planning Organizations (MPOs).

REFERENCES

- Indiana Traffic Safety Plan (Per 23 U.S.C. § 402)
- Indiana Commercial Vehicle Safety Plan (Per 49 CFR 350)
- Indiana Traffic Records Strategic Plan (Per 23 CFR 1200)
- Indiana Highway Safety Improvement Program (Per 23 CFR 924)

GLOSSARY

Codes and Regulations:
23 U.S.C. § 130: Railway Highway Crossings
23 U.S.C. § 148: Highway Safety Improvement Program
23 U.S.C. § 402: Highway Safety Programs
23 U.S.C. § 406: Grants for Primary Safety Belt Use Laws
23 U.S.C. § 408: State Traffic Safety Information System Improvement Grants
23 CFR 924: Highway Safety Improvement Program
23 CFR 1200: Uniform Procedures for State Highway Safety Programs
49 CFR 350: Commercial Motor Carrier Safety Assistance Program

Acronyms:
4Es: Engineering, Education, Enforcement, Emergency Medical Services
AASHTO: American Association of State Highway Transportation Officials
CFR: Code of Federal Regulations
CVSP: Commercial Vehicle Safety Plan
INDOT: Indiana Department of Transportation
FHWA: Federal Highway Administration
FMCSA: Federal Motor Carrier Safety Administration
FRA: Federal Railroad Administration
HMVMT: Hundred Million Vehicle Miles Traveled
HRRR: High Risk Rural Road
HSIP: Highway Safety Improvement Program
HSP: Highway Safety Plan (Section 402)
INSTIP: Indiana Statewide Transportation Improvement Program
MPO: Metropolitan Planning Organization
NCHRP: National Cooperative Highway Research Program
NHTSA: National Highway Traffic Safety Administration
ORSM: INDOT Office of Roadway Safety and Mobility
SAFETEA-LU: Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SHSP: Strategic Highway Safety Plan
TIP: Transportation Improvement Program
TRCC: Traffic Records Coordinating Committee
TSP: Transportation Safety Planning
U.S.C.: United States Code